



CITY OF CAMBRIDGE
COMMUNITY DEVELOPMENT DEPARTMENT

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TO: Robert W. Healy, City Manager

FROM: Beth Rubenstein, Assistant City Manager
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Lisa Peterson, Commissioner, Department of Public Works

DATE: July 30, 2007

RE: Council Order #7 dated April 30, 2007: Investigate banning
Disposable plastic bags from large retail stores and other
measures to reduce use and increase recycling of plastic bags

Polyethylene plastic bags contribute to litter in trees, gutters and waterways and they are a petroleum-based product that causes pollution when manufactured and incinerated. Polyethylene plastic bags are not biodegradable and can take 1,000 years to decompose in landfills. Several strategies can be used to either limit or eliminate the usage of plastic bags:

- **Recycling:** Although plastic bags can be recycled, they rarely are. According to the US Environmental Protection Agency the national recycling rate is only 1%. Although Rhode Island has a comprehensive plastic bag recycling program at partner grocery stores, program staff estimate that only about 10% of bags are actually recycled. Although the City accepts plastic bags for recycling at its Drop-off Center, we estimate that the bags being recycled represent only a small percentage of total bag usage in Cambridge.
- **Provide incentives for consumers to use reusable shopping bags:** This strategy is already in use at Whole Foods and Harvest Coop grocery stores in Cambridge, which provide a 5-cent rebate to customers who bring their own bag. Several grocery stores have also recently started selling reusable shopping bags at a greatly reduced price to encourage shoppers to forego single-use bags. While such incentives reduce the use of single-use bags, it is difficult to predict whether they will result in a significant reduction in the use of plastic bags.
- **Charge for plastic bags:** Several European countries have introduced taxes and levies to discourage the use of plastic bags. In Ireland, the use of non-biodegradable plastic bags went down by 90% after a 15-cent tax was introduced in 2002. In Denmark, which also taxes plastic bags, the results have been less dramatic. According to the Boston Globe, State Senator Brian A. Joyce is poised to file legislation that would levy a fee on non-compostable plastic bags at big retailers. The fee would start at 2 cents per bag in 2008 and rise to 15 cents by 2014.



- **Enact a ban on the use of plastic bags:** Non-biodegradable plastic bans have been banned in a number of countries including Australia, Singapore, South Africa and Bangladesh. In the United States, plastic bags have been banned in the city of San Francisco and other U.S. cities, including the City of Boston, are considering such action. A description of San Francisco's plastic bag ordinance is provided below. This ban is selective in that it targets only large supermarkets and chain pharmacies. It is therefore not clear what percentage of the waste stream the ban will impact.

Bag Alternatives and Life Cycle Costs

Alternatives to polyethylene plastic bags include single-use paper bags and biodegradable plastic bags as well as reusable shopping bags. As described below, reusable shopping bags have significantly lower environmental impacts compared with all types of single-use bags.

Single-use bags - whether they are made of plastic or paper - have significant, if different, environmental impacts which has led many environmental groups, including the Sierra Club and Union of Concerned Scientists, to conclude that neither are good for the environment. Although plastic requires less energy to produce than paper, plastic is derived from petroleum, a non-renewable source. Just 14 plastic shopping bags contain enough petroleum energy to drive a car 1 mile. Polyethylene plastic bags do not biodegrade, cause air pollution when incinerated, create litter and have negative impacts on marine life. At the same time, paper production requires more resources (trees, water, energy), causes air pollution when manufactured and contributes to global warming as trees are cut down and greenhouse gases are emitted in the production process. Although more paper bags are recycled than plastic, paper requires 90% more energy to recycle per pound.

Degradable bags have somewhat better environmental characteristics, but according to a comprehensive study commissioned by the Australian Department of the Environment and Heritage, degradable bags have similar greenhouse gas impacts to conventional plastic bags and have much higher nutrient impacts that can lead to pollution of waterways. If degradable bags can be kept out of landfills, where they tend to persist, and managed through composting, the impacts will be reduced but not eliminated.

San Francisco Plastic Bag Reduction Ordinance

The SF Plastic Bag Reduction Ordinance, adopted in March of 2007, applies to large grocery stores with annual sales of \$2 million or more and large chain pharmacies. Grocery stores have six months to comply; pharmacies have a year. Disposable bags that will be allowed must be compostable (meeting current specifications from ASTM International, formerly the American Society for Testing and Materials, a voluntary standards development organization) or recyclable paper (with a minimum of 40% post-consumer recycled content). Fines are up to \$100 for the 1st violation, up to \$200 for the 2nd and up to \$500 for each violation thereafter.

SF is working to divert 75% of its waste by 2010 and get to zero waste by 2020. SF has a comprehensive 3 stream curbside program: blue bins for single stream recycling, green bins for yard/food waste and black for residual trash. Compostable bags can be recycled in SF's green garbage bins and the bags will make it more convenient for residents to recycle food scraps. An estimated 180 million bags are used annually, based on 740,000 population.

Boston

The City of Boston is also considering a ban on plastic bags and plans to follow the SF model, mainly motivated by the desire to reduce litter. Boston will hold a hearing on the proposed legislation in July or August and several industry stakeholders, representing grocers and plastic bag manufacturers, are expected to attend. Other cities, such as Portland, OR and Berkeley, CA are also considering whether to enact bans.

Cambridge Scenario

Using SF figures, Cambridge plastic bag use is estimated at 25 million a year. If a ban similar to San Francisco's were enacted in Cambridge, it would be desirable to coordinate the requirements with Boston, so that large supermarkets and chain pharmacies would follow the same requirements.

Large supermarkets that would likely be subject to compliance in Cambridge include:

Harvest Coop
Star Market, 3 stores
Trader Joe's
Whole Foods, 3 stores

Chain pharmacies that would likely be subject to compliance in Cambridge include:

Rite Aid, 2 stores
CVS, 5 stores
Walgreen's

Next Steps

Given the regulatory, environmental and practical complexity of this issue, we recommend that the matter be referred to committee for further discussion.